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AUTHOR Powell, George D.; Deck, Dennis
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ABSTRACT

An increased proportion of Chapter 1 budgets across the country have been directed to the purchase of microcomputer hardware and software. A major reason for this expenditure has been the promise of better instruction, or at least more instruction for Chapter 1 students, without additional staff resources. Although evidence for instructional improvement through microcomputers in Chapter 1 programs is equivocal, this technology has been used by Chapter 1 administrators for such tasks as state-level reporting, sustained gains studies, application writing, evaluation analysis, and budgeting. The four school-based examples of technical assistance to Chapter 1 programs that are highlighted in this paper have proven initially successful. These include a rural parish in Louisiana, a large school system in the Southwest, an urban high school in the Northwest, and the department of education of a western state. Computer uses range from utilization of a file management/spread sheet for allocation of resources, to development of a computer program to decentralize test scoring and reporting functions. This report also provides information on materials used to train Chapter 1 administrators in the proper selection and use of software tools, and concludes with information necessary to request referenced training materials. (JB)

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Where Chapter 1 has Used the New Technology: Some Bright Patches Against a Dark Background

George D. Powell, Ph.D.
Powell Associates, Inc.
and
Dennis Deck
Northwest Regional Educational Laboratory

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WHERE CHAPTER 1 HAS USED THE NEW TECHNOLOGY: SOME BRIGHT PATCHES AGAINST A DARK BACKGROUND

George D. Powell, PhD
PAI, Austin, Texas

Dennis Deck
NWREL, Portland, OR

An increased proportion of Chapter 1 budgets across the country have been directed to the purchase of microcomputer hardware and software. A major reason for this shifting expenditure has been the promise of better instruction, or at least more instruction for Chapter 1 students without additional staff resources.

There has been concern raised that Chapter 1 students are not being afforded the same access to the technology of microcomputers as their more affluent peers (Reisner, 1983). However, there have also been doubts raised as to the benefit of this new technology. Richard Clark (Clark,1983) reviewed research on mediated learning in general. He concluded that "the best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition." He also concluded that choice of media (e.g. microcomputer based CAI) can indeed influence the cost or extent of instruction.

In reviewing successful submissions to the Joint Dissemination Review Panel of the USDE, there is only one Chapter 1 CAI project that has been given "exemplary" status. It is safe to state that the promise of instructional use of computers in Chapter 1 programs lies still in the future. However, the stage has been set for the purchase and use of computers in Chapter 1 programs. Even though there may be equivocal evidence for instructional improvement through microcomputers, there has been a side benefit of this technological enthusiasm in the administration of Chapter 1 programs.

The Chapter 1 TACs have as their mission the provision of free assistance to Chapter 1 programs in evaluation and reporting. With the advent of microcomputers in Chapter 1 programs,a powerful tool has been made available to Chapter 1 administrators for such tasks as State-level reporting, sustained gains studies, application writing, evaluation analysis, budgeting and resource allocation.

In the last two years, the TAC network has developed several materials to train Chapter 1 administrators in the proper selection and use of software tools. These training materials and sessions include:

- o Microcomputers in Chapter 1 from NWREL
- o Administrative Uses of the Commodore Computer from NWREL
- o Microcomputer Applications for Chapter 1 Administrators from PAI
- o Programs for Use with the TI-59 Programmable Calculators in Analyzing Chpater 1 Test Data from ETS
- o The Rhode Island Chapter 1 Information Program(approximate Title) from RMC-New Hampshire

In these training materials, the TAC has provided training and information on word processing, spreadsheet, file management and statistical programs that can be used by Chapter 1 administrators to perform a variety of required administrative tasks such as:

- o needs assessment reporting
- o budgeting
- o TIERS reporting including the Model A analysis
- o report writing
- o sustained gains
- o student selection

This type of technical assistance tends to be more costly to provide than for other TAC Chapter 1 topics. This is because of the smaller audiences that can be accomodated for training and because of the amount of preparation time required.

It is too early to evaluate the long term impact of this type of technical assistance to Chapter 1 programs, however, the follow school-based examples can illustrate some initial successes. In each example, the Chapter 1 program was provided with training by TAC personnel, but the actual implementation was solely the achievement of the local project personnel.

LONGITUDINAL STUDENT RECORD KEEPING

A rural parish in Lousiana, faced with a growing Chapter 1 population and a limited budget turned to microcomputer technology to maintain a longitudinal data base of Chapter 1 students and services. Using an Apple computer, a Corvus hard disk and a simple file management program, the parish was able to report and update student score information with a minimum of errors.

In planning, the program set up a two year implementation schedule. During the first year, the program clarified its needs for microcomputer involvement. It systematically gathered information on available hardware and software. Once this was done, the program hired a data entry clerk whose sole responsibility was the entry and maintenance of the data file. During the summer of that first year, the initial pretest and demographic data were entered onto the file.

During the second year, data entry was completed and data editting was carried on. Computer records were checked against paper records to assure accuracy of the information. The pretest information was made available for student selection procedures for those students who had taken the pretest. Because of the added capability (including the data entry clerk), the program began to maintain its Chapter 1 inventory on the same software system.

Now during the third year, the parish Chapter 1 program lists the results of this change over in procedure to include:

- o instant access to current lists of Chapter 1 participants
- o a noticeable reduction in paper work for Chapter 1 teachers and paraprofessionals
- o easier access to statistical summaries of Chapter 1 data leading to a greater incentive to do research with that data
- o easy expansion to other applications (eg, inventory, test scoring)

This parish program has become a resource for other Lousiana Chapter 1 programs. The TAC provides follow-up as requested . The use of the Chapter 1 program as a resource to other parishes has led to a more managable work load for the TAC in meeting the needs of other schools in Lousiana.

RESOURCE ALLOCATION

A large school system in the Southwest maintains Chapter 1 programs in over 30 individual elementary schools. In order to maintain an equitable distribution of funds for each school, the Chapter 1 program staff must allocate resources (ie, teachers and aides) according to the percentage of Chapter 1 eligle students on campus. Since the actual cost of a teaching unit is not determined without school board approval, the determination of the number of teacher units per Chapter 1 school cannot be made in a vacuum. In addition, the number of teacher units per school cannot be determined until the projections for school attendance for the coming year are made.

This situation results in the need for the school board to examine more than one "scenario" to determine the best mix of resources to be used. The following table gives a hypothetical example of scenarios that might be considered:

Possible 85-86 Base Allocation	Total Cost	Total # Teacher	Total # Aides	Change in Total Cost from this year
1 teacher + 1 aide	(million$) $2.9	96	27	(million$) -$.7
1.5 teacher	$3.2	113	7	-$.4
1 teacher + 2 aide	$3.8	123	35	+$.1
2 teacher	$4.0	150	0	+$.4

In the past, the generation of a table like that above would have taken over 1 person day to create based on the equitable allocation of "base" across each of the 30 campuses. That is, each campus would have a number of "units" of allocation assigned to it based on 1 unit being asssigend to the least needy campus.

With the use of a file management/spread sheet program, the Chapter 1 staff have been able to present any number of scenarios to their board with less than a half-hour's effort. Once the board has decided on its base allocation, the staff can generate the allocation list and have it to each of the 30 principals within a day. In the coming years, the Chapter 1 staff will have the ability to offer more scenarios with a minimum amount of time involved.

DO IT YOURSELF DATABASE

This urban High School in the Northwest serves as a good example of what can be done with a minimum of resources. Despite the lack of evaluation or dataprocessing staff in the district, Chapter 1 staff implemented a longitudinal student database of their own design using simple microcomputer software.

The program serves about 500 students in reading, language arts, and mathematics. Students go to a resource room for individual or small group tutoring as needed. In the resource room a student might work with the teacher, an aide, a peer tutor, or a microcomputer.

In order to coordinate with regular classroom teachers and to document the services delivered in this flexible program, the Chapter 1 staff kept extensive attendance records. The high turnover in the program also made the year end evaluation more difficult. Although there were several Apple microcomputers in the resource room, these records were maintained with logs and card files. These manual files proved clumsy for reorganizing or summarizing the data.

Program staff attended a practical, hands-on, microcomputer workshop by the regional TAC. The workshop was based on a simple student database developed using the PFS File and PFS Report programs. The first intent of the workshop was to present basic database management concepts. The second was to demonstrate a student database that could be used to answer local questions about program participants as well as prepare required Chapter 1 evaluation reports each year. The third was to suggest ways that the basic database might be modified to better fit the local program. The fourth was to prompt other ideas for database applications that would help make recordkeeping by computer an ongoing activity.

The staff applied the what they had learned by building an instructional monitoring database to log the date, time, and and content of each student visit. They can now produce weekly reports of the amount and type of service daily received by each student. These reports go the English and Math department heads as well as the district evaluator to assist in coordination efforts between the Chapter 1 program and the regular classroom. The reports have improved coordination with activities in the regular classroom.

The program, with some TAC consultation, also created a longitudinal student database to keep track of program participation and test scores over a four year period. The intent was to select students, evaluate the program, and conduct sustained effects studies without reentering data each year. The

posttest scores in their fall to fall testing schedule are used as the pretest scores for evaluating the next year's program. Now they can easily track the pattern of student participation across years and compute NCE gains for various subgroups, like those served more than 8 weeks.

Our experiences with this project underscore several points:

- o training can help teachers build and use simple student databases
- o functional databases can be built with minimal resources
- o staff involvement in the development of a database ensures committment
- o variations in local programs preclude a single solution in designing Chapter 1 student databases

TEST SCORING AND REPORTING

The state department of education in this western state works essentially as one large school district. Chapter 1 evaluation activities are handled centrally. After working using test publisher services and contractors, the department decided to bring test scoring in house. An attempt to set up a centralized, microcomputer based system for scoring tests was not successful for bureaucratic reasons. Consequently, teachers handscored tests and sent data sheets to the evaluation office where raw scores were converted to derived scores and the evaluation reports prepared. Two or three months after the test is administered, teachers and adminstrators receive the class lists and evaluation reports. Obviously, the test results are no longer deemed instructionally relevant and are rarely used.

As part of a Secretary's Initiative grant, school district, the department of education, and the regional TAC cooperatively developed THE TEST CLERK, a microcomputer program to decentralize the score conversion and reporting functions. In this pilot project, staff enter raw scores on an IBM PC using THE TEST CLERK. The program looks up derived scores and prints graphic displays of the scores.

The results of the pilot have been very encouraging. Staff training and entry of all the norms tables took only an afternoon. Processing the pretest data, squeezed between other projects, took less than two weeks. Followup activities will help evaluate the effects of quick turnaround on teacher use of data.

After the posttest data is analyzed, the data file will be transferred to the state office by telecommunications so that further analyses may be made on other computers and so that the data may be added to the statewide student database. A planned extensions of this system is to use mark sense scanners at the larger district offices and provide objective level information from the test.

Some tentative conclusions from this site include:

- Data entry near the source of the data increases the timeliness and quality of data
- Timely and properly displayed results improve the acceptance and appropriate use of test data
- Use of a "fourth generation" programming language minimized development time and errors in the turnkey system

REFERENCES

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Reisner, Elizabeth R. "The use of computers in instruction supported under Chapter 1 of the Education Consolidation and Improvement Act", 1983, Policy Studies Associates, Inc. Washington, D.C.

For additional information on referenced workshop materials, contact the TAC Clearinghouse, Northwest Regional Laboratory, Portland, Oregon.